# INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2004/017995

A. CLASSIFICATION OF SUBJECT MATTER
Int.Cl[7] C12N15/09, C12Q1/68, 1/02, G01N33/53, 33/50, 33/15

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
Int.Cl[7] C12N15/00-90, C12Q1/00-70, G01N33/53, 33/50, 33/15

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
JICST FILE(JOIS), EUROPAT(QUESTEL), MEDLINE/BIOSIS/WPIDS(STN), SwissProt/PIR/GeneSeq, Genbank/EMBL/DDBJ/GeneSeq

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| A | C. GERBAUX et al., Hyperactivity of cathepsin B and other lysosomal enzymes in fibroblasts exposed to azithromycin, a dicationic macrolide antibiotic with exceptional tissue accumulation, 1996, FEBS Letters, 394, p.307-10 | 1-11 |
| T | H.SAWADA et al., A toxicogenomic approach to drug-induced phospholipidosis: analysis of its induction mechanism and establishment of a novel in vitro screening system, 2005, Toxicol.Sci., 83(2), p.282-92. | 1-11 |

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 19 January, 2005 (19.01.05) | 08 February, 2005 (08.02.05) |
| Name and mailing address of the ISA/ Japanese Patent Office | Authorized officer |

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International application No.
PCT/JP2004/017995

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| A | H.F. Clark et al., The Secreted protein discovery initiative (SPDI), a large-scale effort to identify novel human secreted and transmembrane proteins: a bioinformatics assessment, 2003, ACCESSION: NM_014960, NM_022823, Genome Res., 13(10), p.2265-70 | 1-11 |
| A | J.R.Churchill et al., A new gene family predicted by a novel human heart cDNA, 1995, ACCESSION: U47674, Mol.Biol.Cell, 6(Suppl), p.418a | 1-11 |
| A | R.L. Strausberg et al., Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences, 2002, ACCESSION: NM_024307, Proc.Natl.Acad.Sci.U.S.A., 99(26), p.16899-903 | 1-11 |
| A | C.K.Sung et al., Molecular cloning of cDNA encoding human lanosterol synthase, 1995, ACCESSION: D63807, Biol.Phar.Bull., 18, p.1459-61 | 1-11 |
| A | K.Lai et al., Estrogen Receptor Regulates Expression of the Orphan Receptor Small Heterodimer Partner, Sep.2003, ACCESSION: NM_021969, J.Biol.Chem., 278(38), p.36418-29 | 1-11 |
| A | M.M.Pelsers et al., Intestinal-type and liver-type fatty acid-binding protein in the intestine. Tissue distribution and clinical utility, Oct.2003, ACCESSION: NM_001443, Clin.Biochem., 36(7), p.529-35 | 1-11 |
| A | A.Tsuji et al., Hepsin a cell membrane-associated protease. Characterization, tissue distribution, and gene localization, 1991, ACCESSION: NM_002151, J.Biol.Chem., 266(25), p.16948-53 | 1-11 |
| A | S.Hutchinson et al., Purification of human kallikrein 6 from biological fluids and identification of its complex with alpha (1)- antichymotrypsin, May 2003, ACCESSION: NM_001085, Clin.Chem., 49(5), p.746-51 | 1-11 |
| A | S. Wiemann et al., Toward a catalog of human genes and proteins: sequencing and analysis of 500 novel complete protein coding human cDNAs, 2001, ACCESSION: AL136653, Genome Res., 11(3), p.422-35 | 1-11 |

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2004/017995

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| A | T. Kayano et al., Human facilitative glucose transporters. Isolation, functional characterization, and gene lacalization of cDNAs encoding an isoform (GLUT5) expressed in small intestine, Kidney, muscle, and adipose tissue and an unusual glucose transporter pseudogene-like sequence (GLUT6), 1990, ACCESSION: NM_006931, J.Biol.Chem., 265(22), p.13276-82 | 1-11 |
| A | J.M.Shields et al., Loss of transgelin in breast and colon tumors and in RIE-1 cells by Ras deregulation of gene expression through Raf-independent pathways, 2002, ACCESSION: NM_003186, J.Biol.Chem., 277(12), p.9790-9 | 1-11 |

# INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2004/017995

**Box No. II** **Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: parts of 2, 4, 5, 7 and 9 to 11
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
(See extra sheet.)

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III** **Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:
The genes of SEQ ID NOS:1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21 and 23 according to claims 1 to 11 have no chemical structure in common but are common to each other exclusively in being a gene the expression of which alters depending on the occurrence of phospholipidosis. However, it is a publicly known attempt to obtain a gene the expression of which alters depending on the occurrence of phospholipidosis, as reported in, for example, the following document.
C. Gerbaux, et al., Hyperactivity of cathepsin B and other lysosomal enzymes in fibroblasts exposed to azithromycin, a dicationic macrolide antibiotic with exceptional tissue accumulation, 1996, FEBS Letters, 394, p.307-10.
Such being the case, the inventions (continued to extra sheet)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

Continuation of Box No.II-2 of continuation of first sheet(2)

Claims 1, 3, 6 and 8

In these claims, it is unclear that the expression "having ·· sequence" means whether "consisting of ·· sequence" or "containing ·· sequence". Thus, these claims are not described in a clear manner.

Claims 4 and 7

In these claims, the expression "about" makes the scope of the invention unclear. Thus, these claims are not described in a clear manner.

Claims 2, 4, 5, 7 and 9 to 11

It is unclear what substances the "genes" the expression of which alters depending on the occurrence of phospholipidosis in the above claims are in practice. Thus, these claims are not described in a clear manner.

Although EXAMPLES and so on are discussed concerning the above "genes", it is unknown what genes other than those having base sequences represented by any of SEQ ID NOS:1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21 and 23 correspond thereto. Thus, the inventions according to these claims are not sufficiently supported by the description nor disclosed therein in a manner sufficiently clear and complete for the inventions to be carried out by a person skilled in the art.

No search was made on the inventions which are neither sufficiently supported by the description nor disclosed in the description in a sufficiently clear and complete manner, as discussed above.

Continuation of Box No.III of continuation of first sheet(2)

relating to the above genes according to claims 1 to 11 cannot be considered as being a group of inventions so linked as to form a single general inventive concept but being 12 groups of inventions differing from each other.